WHAT IS CLAIMED IS:

1. A die having a through hole for use in an extrusion process to reduce the diameter of a metal pipe or tube,

the through hole having an inside surface including a bell portion, an approach portion, and a bearing portion from the entrance side of said die formed in a continuous manner, wherein

the diameter of the through hole at said bell portion gradually decreases from the entrance side of said bell portion to the exit side of said bell portion,

the diameter of the through hole at said approach portion is D1 on the entrance side of said approach portion and D2 on the exit side of said approach portion and gradually decreases from the entrance side of said approach portion to the exit side of said approach portion to satisfy Equation (1):

$$0.7 \leq D2/D1 < 0.97 \quad \ldots(1)$$

the die half angle of an inside surface where the diameter D3 is D2/0.97 is not less than the die half angle of an inside surface nearer to the exit side of said approach portion than the inside surface where the diameter is D3, the axial length LR from the inside surface where the diameter is D3 to the inside surface where the diameter is D2 satisfies Equation (2):

$$20 \leq LR/((D3-D2)/2) \leq 115 \quad \ldots(2):$$

the diameter of the through hole in said bearing portion is fixed at D2, and the length is LB and satisfies Equation (3):

$$0.3 \leq LB/D2 \leq 10 \quad \ldots(3)$$

2. A method of manufacturing a stepped metal pipe or tube,

comprising:

pushing a metal pipe or tube into a die in an axial direction, said die having a through hole for use in an extrusion process to reduce the diameter of a metal pipe or tube,

said through hole having an inside surface including a bell portion, an approach portion, and a bearing portion from the entrance side formed in a continuous manner, wherein

the diameter of the through hole at said bell portion gradually decreases from the entrance side of said bell portion to the exit side of said bell portion of the hole,

the diameter of the through hole at said approach portion is D1 on the entrance side of said approach portion and D2 on the exit side of said approach portion and gradually decreases from the entrance side of said approach portion to the exit side of said approach portion to satisfy Equation (1):

$$0.7 \leq D2/D1 < 0.97 \quad \ldots(1)$$

the die half angle of an inside surface where the diameter D3 is D2/0.97 is not less than the die half angle of an inside surface nearer to the exit side of said approach portion than the inside surface where the diameter is D3, the axial length LR from the inside surface where the diameter is D3 to the inside surface where the diameter is D2 satisfies Equation (2):

$$20 \leq LR/((D3-D2)/2) \leq 115 \quad \ldots(2):$$

the diameter of the through hole in said bearing portion is fixed at D2, and the length is LB and satisfies Equation (3):

$$0.3 \leq LB/D2 \leq 10 \quad \ldots(3)$$

said method comprising,

extruding an end of said pushed metal pipe or tube to protrude a prescribed length from the exit side of said die, thereby making the metal pipe or tube into a stepped metal pipe or tube; and

stopping extruding and pushing back the stepped metal pipe or tube in the direction opposite to the direction of pushing the metal pipe or tube.

3. The method of manufacturing a stepped metal pipe or tube according to claim 2, wherein said metal pipe or tube is manufactured by a Mannesmann process.

4. A stepped metal pipe or tube including a first hollow cylindrical portion, a taper portion, and a second hollow cylindrical portion formed in a continuous manner, wherein the outside diameter of said first hollow cylindrical portion is DA,

the outside diameter of said second hollow cylindrical portion is DB that is smaller than said DA,

the outside diameter of said taper portion gradually decreases from said first hollow cylindrical portion to the second hollow cylindrical portion as the value of the outside diameter decreases from DA to DB, and the axial distance LE from the surface where the outside diameter DC is DB/0.97 to the surface where the outside diameter is DB satisfies Equation (4):

$$20 \leq LE/((DC-DB)/2) \leq 115 \qquad \ldots(4)$$